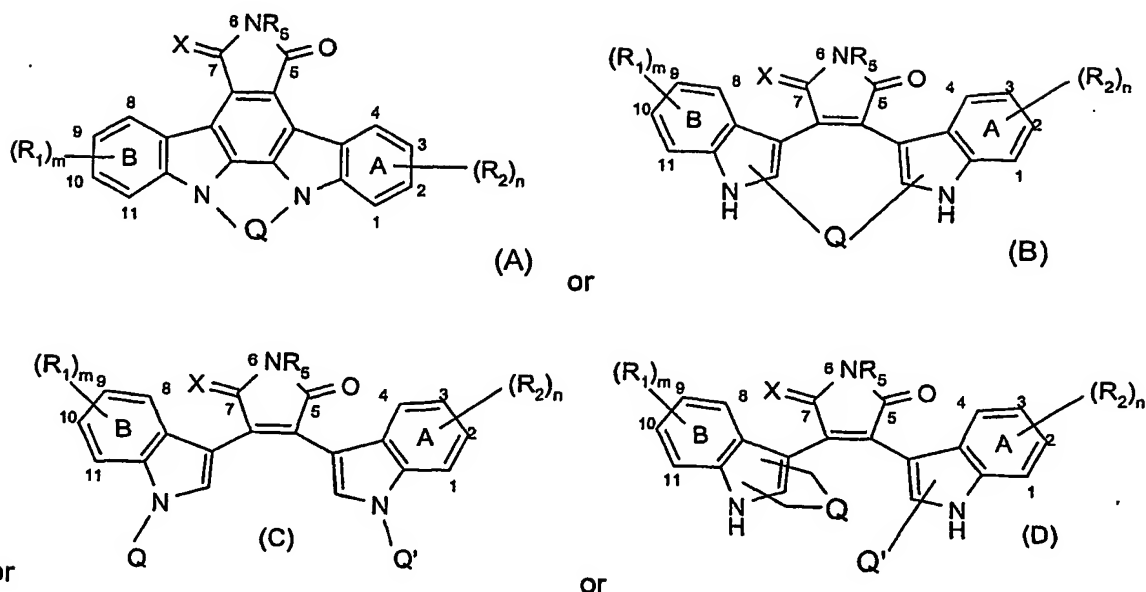


## Claims:

## 1. Use of staurosporine derivatives of formula,



wherein  $R_1$ , and  $R_2$  are, independently of one another, unsubstituted or substituted alkyl, hydrogen, halogen, hydroxy, etherified or esterified hydroxy, amino, mono- or disubstituted amino, cyano, nitro, mercapto, substituted mercapto, carboxy, esterified carboxy, carbamoyl, N-mono- or N,N-di-substituted carbamoyl, sulfo, substituted sulfonyl, aminosulfonyl or N-mono- or N,N-di-substituted aminosulfonyl;

$n$  and  $m$  are, independently of one another, a number from and including 0 to and including 4;

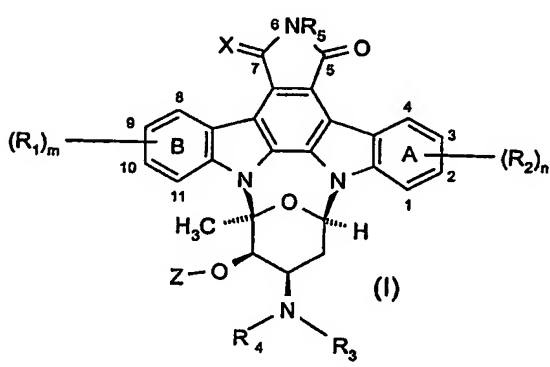
$R_5$  is hydrogen, an aliphatic, carbocyclic, or carbocyclic-aliphatic radical with up to 29 carbon atoms in each case, or a heterocyclic or heterocyclic-aliphatic radical with up to 20 carbon atoms in each case, and in each case up to 9 heteroatoms, or acyl with up to 30 carbon atoms;

$X$  stands for 2 hydrogen atoms; for 1 hydrogen atom and hydroxy; for O; or for hydrogen and lower alkoxy;

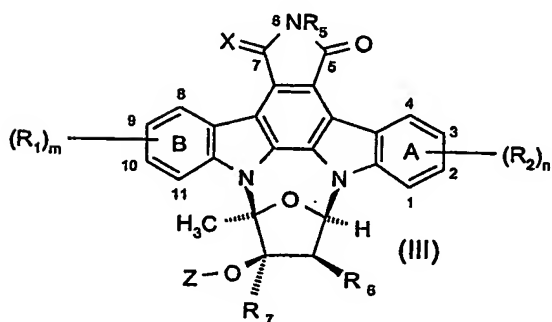
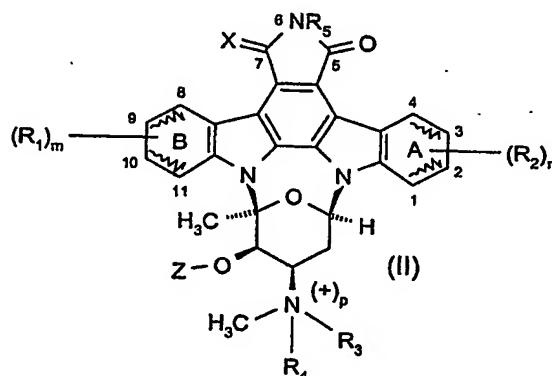
Q and Q' are independently a pharmaceutically acceptable organic bone or hydrogen, halogen, hydroxy, etherified or esterified hydroxy, amino, mono- or disubstituted amino, cyano, nitro, mercapto, substituted mercapto, carboxy, esterified carboxy, carbamoyl, N-mono- or N,N-di-substituted carbamoyl, sulfo, substituted sulfonyl, aminosulfonyl or N-mono- or N,N-di-substituted aminosulfonyl;

or a salt thereof, if at least one salt-forming group is present, or hydrogenated derivative thereof, for the preparation of a pharmaceutical composition for the treatment of FIP1L1-PDGFR $\alpha$ -induced myeloproliferative diseases.

2. The use of a staurosporin derivative selected from the compounds of formula,

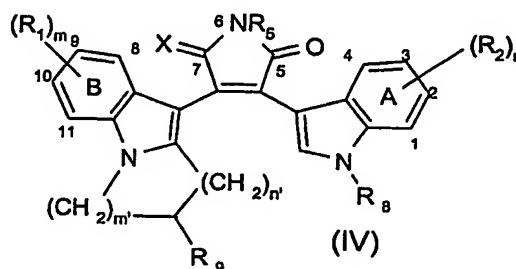


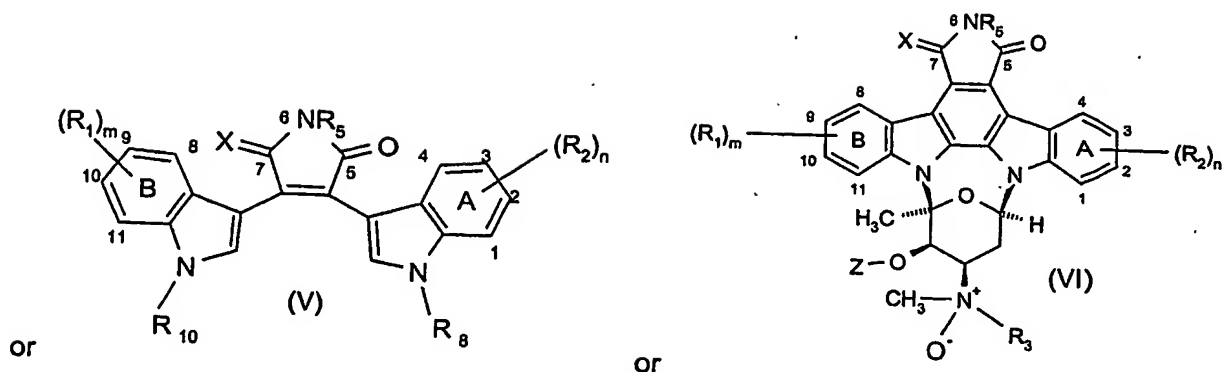
or



or

or





wherein  $R_1$  and  $R_2$ , are, independently of one another, unsubstituted or substituted alkyl, hydrogen, halogen, hydroxy, etherified or esterified hydroxy, amino, mono- or disubstituted amino, cyano, nitro, mercapto, substituted mercapto, carboxy, esterified carboxy, carbamoyl, N-mono- or N,N-di-substituted carbamoyl, sulfo, substituted sulfonyl, aminosulfonyl or N-mono- or N,N-di-substituted aminosulfonyl;

$n$  and  $m$  are, independently of one another, a number from and including 0 to and including 4;

$n'$  and  $m'$  are, independently of one another, a number from and including 1 to and including 4;

$R_3$ ,  $R_4$ ,  $R_8$  and  $R_{10}$  are, independently of one another, hydrogen, an aliphatic, carbocyclic, or carbocyclic-aliphatic radical with up to 29 carbon atoms in each case, a heterocyclic or heterocyclic-aliphatic radical with up to 20 carbon atoms in each case, and in each case up to 9 heteroatoms, an acyl with up to 30 carbon atoms, wherein  $R_4$  may also be absent;

or  $R_3$  is acyl with up to 30 carbon atoms and  $R_4$  not an acyl;

$p$  is 0 if  $R_4$  is absent, or is 1 if  $R_3$  and  $R_4$  are both present and in each case are one of the aforementioned radicals;

$R_5$  is hydrogen, an aliphatic, carbocyclic, or carbocyclic-aliphatic radical with up to 29 carbon atoms in each case, or a heterocyclic or heterocyclic-aliphatic radical with up to 20 carbon

atoms in each case, and in each case up to 9 heteroatoms, or acyl with up to 30 carbon atoms;

R<sub>7</sub>, R<sub>8</sub> and R<sub>9</sub> are acyl or -(lower alkyl) -acyl, unsubstituted or substituted alkyl, hydrogen, halogen, hydroxy, etherified or esterified hydroxy, amino, mono- or disubstituted amino, cyano, nitro, mercapto, substituted mercapto, carboxy, carbonyl, carbonyldioxy, esterified carboxy, carbamoyl, N-mono- or N,N-di-substituted carbamoyl, sulfo, substituted sulfonyl, aminosulfonyl or N-mono- or N,N-di-substituted aminosulfonyl;

X stands for 2 hydrogen atoms; for 1 hydrogen atom and hydroxy; for O; or for hydrogen and lower alkoxy;

Z stands for hydrogen or lower alkyl;

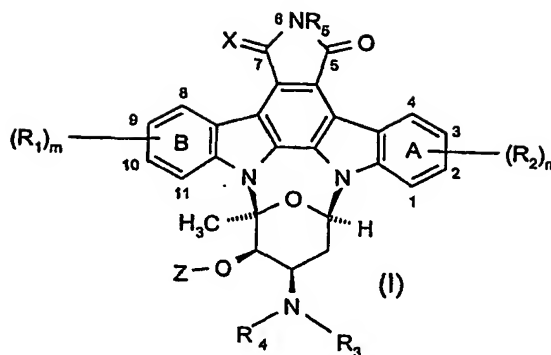
and either the two bonds characterised by wavy lines are absent in ring A and replaced by 4 hydrogen atoms, and the two wavy lines in ring B each, together with the respective parallel bond, signify a double bond;

or the two bonds characterised by wavy lines are absent in ring B and replaced by a total of 4 hydrogen atoms, and the two wavy lines in ring A each, together with the respective parallel bond, signify a double bond;

or both in ring A and in ring B all of the 4 wavy bonds are absent and are replaced by a total of 8 hydrogen atoms;

or a salt thereof, if at least one salt-forming group is present for the preparation of a pharmaceutical composition for the treatment of FIP1L1-PDGFR $\alpha$ -induced myeloproliferative diseases.

3. The use of a staurosporin derivative of formula I,



wherein

**m and n are each 0;**

$R_3$  and  $R_4$  are independently of each other hydrogen,

lower alkyl unsubstituted or mono- or disubstituted, especially monosubstituted, by radicals selected independently of one another from carboxy; lower alkoxy carbonyl; and cyano; or

**R<sub>4</sub> is hydrogen or -CH<sub>3</sub>, and**

R<sub>3</sub> is acyl of the subformula R<sup>o</sup>-CO, wherein R<sup>o</sup> is lower alkyl; amino-lower alkyl, wherein the amino group is present in unprotected form or is protected by lower alkoxy carbonyl; tetrahydropyranyloxy-lower alkyl; phenyl; imidazolyl-lower alkoxyphenyl; carboxyphenyl; lower alkoxy carbonylphenyl; halogen-lower alkylphenyl; imidazol-1-ylphenyl; pyrrolidino-lower alkylphenyl; piperazino-lower alkylphenyl; (4-lower alkylpiperazinomethyl)phenyl; morpholino-lower alkylphenyl; piperazinocarbonylphenyl; or (4-lower alkylpiperazino)phenyl;

or is acyl of the subformula  $R^o-O-CO-$ , wherein  $R^o$  is lower alkyl;

or is acyl of the subformula  $R^oHN-C(=W)-$ , wherein W is oxygen and  $R^o$  has the following meanings: morpholino-lower alkyl, phenyl, lower alkoxyphenyl, carboxyphenyl, or lower alkoxycarbonylphenyl;

or R<sub>3</sub> is lower alkylphenylsulfonyl, typically 4-toluenesulfonyl;

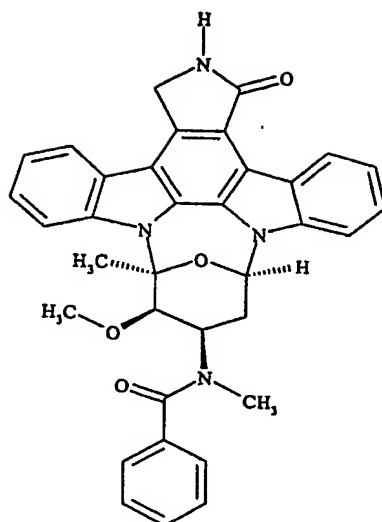
**R<sub>5</sub> is hydrogen or lower alkyl.**

X stands for 2 hydrogen atoms or for O;

**Z is methyl or hydrogen;**

or a salt thereof, if at least one salt-forming group is present for the preparation of a pharmaceutical composition for the treatment of FIP1L1-PDGFR $\alpha$ -induced myeloproliferative diseases.

4. Use according to any one of claims 1 to 3 for the treatment of FIP1L1-PDGFR $\alpha$ -induced myeloproliferative diseases wherein a mutation is present in FIP1L1-PDGFR $\alpha$ .
5. Use according to claim 4, wherein the mutation is T674I.
6. Use according to any one of claims 1 to 3 for the treatment of hypereosinophilic syndrome
7. Use according to claim 6, wherein the hypereosinophilic syndrome is resistant to treatment with imatinib.
8. A method for treating mammals suffering from FIP1L1-PDGFR $\alpha$ -induced myeloproliferative diseases comprising administering to a mammal in need of such treatment a FIP1L1-PDGFR $\alpha$  inhibiting amount of staurosporine derivatives as defined in any one of claims 1 to 3
9. A method according to claim 8 for treating hypereosinophilic syndrome or hypereosinophilic syndrome with resistance to imatinib.
10. Use of *N*-[(9*S*,10*R*,11*R*,13*R*)-2,3,10,11,12,13-hexahydro-10-methoxy-9-methyl-1-oxo-9,13-epoxy-1*H*,9*H*-diindolo[1,2,3-*gh*:3',2',1'-*lm*]pyrrolo[3,4-*j*][1,7]benzodiazonin-11-yl]-*N*-methylbenzamide of the formula (VII):



(VII)

or a salt thereof, for the preparation of a pharmaceutical composition for the treatment of FIP1L1-PDGFR $\alpha$ -induced myeloproliferative diseases.

11. Use according to claim 10 for the treatment of hypereosinophilic syndrome or hypereosinophilic syndrome with resistance to imatinib.

12. Pharmaceutical preparation for the treatment of FIP1L1-PDGFR $\alpha$ -induced myeloproliferative diseases, comprising an *N*-[(9*S*,10*R*,11*R*,13*R*)-2,3,10,11,12,13-hexahydro-10-methoxy-9-methyl-1-oxo-9,13-epoxy-1*H*,9*H*-diindolo[1,2,3-*gh*:3',2',1'-*lm*]pyrrolo[3,4-*j*][1,7]benzodiazonin-11-yl]-*N*-methylbenzamide of the formula (VII).

13. A method for treating mammals, including man, suffering from FIP1L1-PDGFR $\alpha$ -induced myeloproliferative diseases, comprising administering to a mammal in need of such treatment a FIP1L1-PDGFR $\alpha$  inhibiting amount of *N*-[(9*S*,10*R*,11*R*,13*R*)-2,3,10,11,12,13-hexahydro-10-methoxy-9-methyl-1-oxo-9,13-epoxy-1*H*,9*H*-diindolo[1,2,3-*gh*:3',2',1'-*lm*]pyrrolo[3,4-*j*][1,7]benzodiazonin-11-yl]-*N*-methylbenzamide of the formula (VII) as defined in claim 10.

14. A method according to claim 13 for treating hypereosinophilic syndrome or hypereosinophilic syndrome with resistance to imatinib.

15. A method according to any one of claims 10 to 14, wherein the therapeutically effective amount of the compound of formula VII is administered to a mammal subject 7 to 4 times a

week or about 100 % to about 50% of the days in the time period, for a period of from one to six weeks, followed by a period of one to three weeks, wherein the agent is not administered and this cycle being repeated for from 1 to several cycles.

16. Use or method according to any one of claims 10 to 15, wherein the daily effective amount of the compound of formula VII, is 100 to 300 mg daily preferably 220 to 230mg, most preferably 225 mg daily.

17. Use or method according to any one of claims 10 to 16, wherein the compound of formula VII, is administered once, two or three times a day, for a total dose of 100 to 300 mg daily preferably of 220 to 230mg, most preferably 225 mg daily.

18. Use or method according to any one of claims 10 to 17, wherein the compound of formula VII, is administered three times a day, for a total dose of 220 to 230 mg, preferably 225 mg daily, and preferably a dose of 70 to 80 mg most preferably 75 mg per administration.

19. An article of manufacture comprising packaging material, and *N*-[(9*S*,10*R*,11*R*,13*R*)-2,3,10,11,12,13-hexahydro-10-methoxy-9-methyl-1-oxo-9,13-epoxy-1*H*,9*H*-diindolo[1,2,3-*gh*:3',2',1'-*lm*]pyrrolo[3,4-*j*][1,7]benzodiazonin-11-yl]-*N*-methylbenzamide of the formula (VII) as defined in claim 10 or a pharmaceutically acceptable salts thereof, contained within said packaging material, wherein said packaging material comprises label directions which indicate that said compound of formula (VII), or said pharmaceutically-acceptable salt, is to be administered to mammals suffering from a FIP1L1-PDGFR $\alpha$ -induced myeloproliferative disease in an amount from 100 to 300 mg, preferably 220 to 230mg, most preferably 225 mg following a specific dosage regimen to inhibit FIP1L1-PDGFR $\alpha$ .

20. An article of manufacture according to claim 19 wherein the compound of formula VII is administered three times a day, for a total dose of 220 to 230 mg preferably 225 mg daily, and preferably a dose of 70 to 80 mg most preferably 75 mg per administration for treating FIP1L1-PDGFR $\alpha$ -induced myeloproliferative diseases.

21. Use of a staurosporine derivative according to any one of claims 1 to 7 in combination with imatinib, wherein each of the active ingredients, independent of each other, may be

present in free form or in the form of a pharmaceutically acceptable salt, for the treatment of FIP1L1-PDGFR $\alpha$  induced myeloproliferative diseases.